H10723

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-10-26-96

Registry No. H-10723

LOCALITY

State Alaska

General Locality Southwest Prince William Sound

Sublocality Jackpot Bay and Vicinity

1996

CHIEF OF PARTY
CAPT Dean R. Seidel, NOAA

NOAA FORM 77-28 (11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-10723

FIELD NO. RA-10-26-96

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: Alaska

General locality: Southwest Prince William Sound

Locality: Jackpot Bay and Vicinity

Scale: 1:10,000 Date of survey: September 28-October 15, 1996

Instructions dated: August 23, 1996 Project No.: OPR-P139-RA

Vessel: RA-2(2122), RA-4(2124), RA-5(2125), RA-6(2126)

Chief of party: CAPT Dean R. Seidel, NOAA

Surveyed by: CAPT D.Seidel,LT G.Noll, LT M.Larsen, LT S.Meador, LTJG J.Crocker, LTJG E.Christensen, CST J.Fleischmann, ST S. Baum

Soundings taken by echo sounder, hand lead, pole: DSF-6000N

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Evaluation by: ~~Protracted by~~: I. Almacen Automated plot by: HP Design Jet 650C

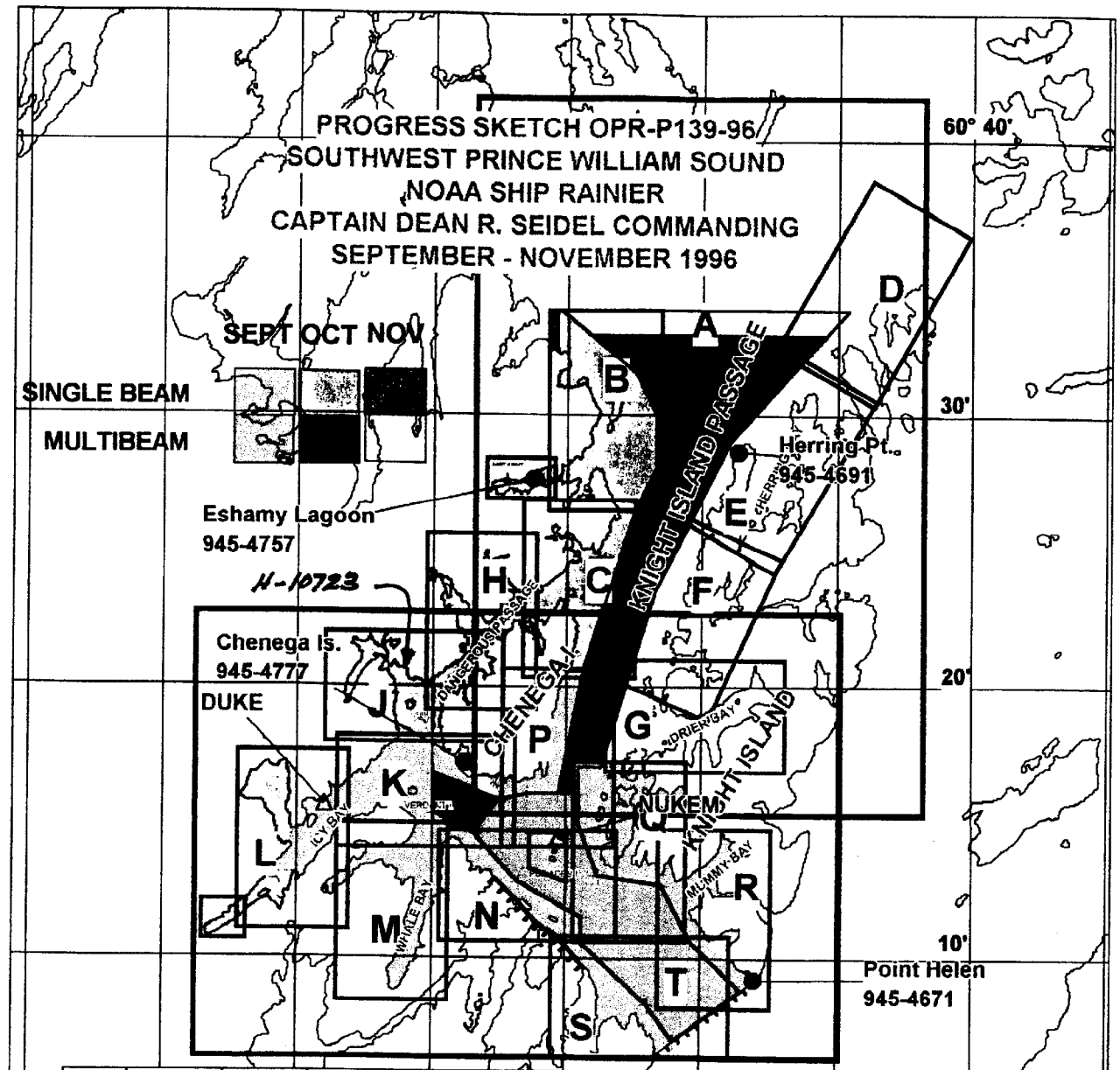
Verification by: R. Mayor, E. Domingo

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and tenths

REMARKS: All times are UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

All depths listed in this report are referenced to mean lower low water unless otherwise noted.

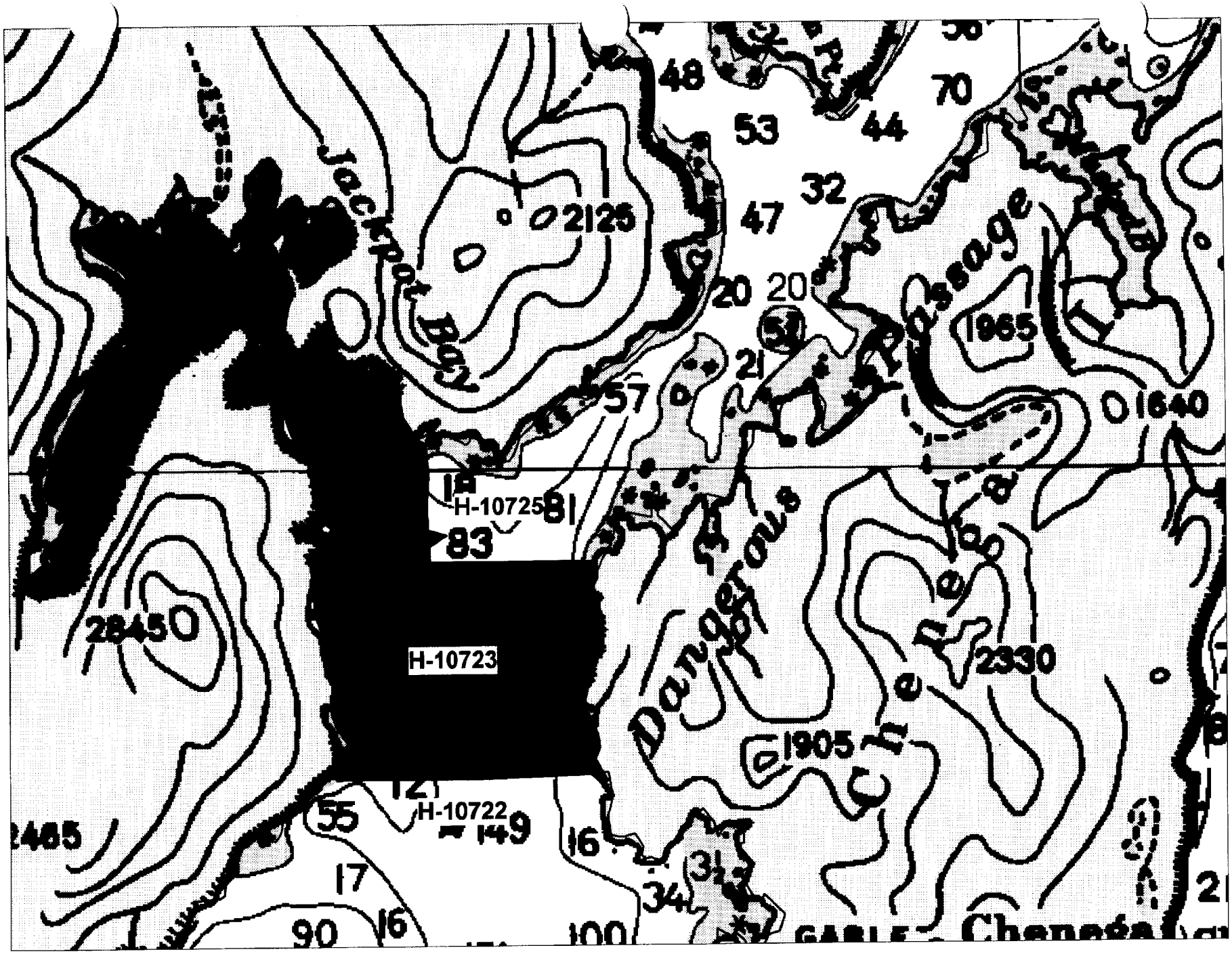
AWOIS/SUITE 1/8/98
MCR



Sheet	Reg_No	Started	Percent	Completed	Submitted	SQNM
Q	H-10713	SEP 3	100%	SEP 24	OCT 25	10.4
R	H-10712	SEP 3	100%	SEP 12	OCT 11	5.8
S	H-10715	SEP 6	100%	SEP 11	OCT 11	4.5
N	H-10716	SEP 9	100%	SEP 21	OCT 11	6.5
T	H-10718	SEP 12	100%	OCT 21		32.7
L	H-10721	SEP 23	100%	OCT 16	NOV 15	9.4
J	H-10723	SEP 28	100%	OCT 14		5.4
P	H-10719	SEP 21	100%	OCT 10	OCT 25	5.1
M	H-10717	SEP 18	100%	OCT 7	OCT 25	7.8
K	H-10722	SEP 19	100%	SEP 28	NOV 15	9.7
H	H-10725	OCT 3	100%	OCT 20		7.3
C	H-10726	OCT 8	100%	OCT 23		9.1
B	H-10730	OCT 18	100%	NOV 1		16.5
A	H-10729	OCT 17	100%	NOV 1		52.7

Downtime_Type	Sept	Oct	Nov
Weather - Days	2	0	0
Mechanical -Hr	14	2	0
Electronic -Hr	2	0	0

Accomplished	Sept	Oct	Nov
LNM Hydro	1621	1783	4.2
LNM SSS	0	0.4	0
SQ NM	79.9	87.2	15.7
AWOIS Invest.	5	1	0
Other Invest.	14	27	0
LNM Multibeam	107.4	210.2	60.8


Jackpot Bay
Passage
Dangerous
Cove
H-10725
H-10723
H-10722
2125
1965
1640
2330
1905
2845
2485
48
53
44
70
32
47
20
20
21
57
83
81
55
149
16
17
34
90
16
100
Chenega

Descriptive Report to Accompany Hydrographic Survey H-10723

Field Number RA-10-26-96
Scale 1:10,000
September - October 1996
NOAA Ship RAINIER
Chief of Party: Captain Dean R. Seidel, NOAA

A. PROJECT ✓

This basic hydrographic survey was completed as specified by Project Instructions OPR-P139-RA dated August 23, 1996. Survey H-10723 corresponds to sheet J as defined in the sheet layout. This survey will provide data to supersede parts of two surveys performed in 1933. Requests for hydrographic surveys and updated charts in this area have been received from the Defense Mapping Agency, the U.S. Coast Guard, the Southwest Alaska Pilot's Association, cruise ship lines, and local fishermen.

B. AREA SURVEYED (See EVAL RPT., Sec. B)

The survey area is located at the southern approach to Dangerous Passage including Jackpot Bay. The survey's northern limit is latitude 60° 22' 00" N, the southern limit is 60° 17' 58" N, the eastern limit is 148° 09' 07" W and the western limit is the shore and within Jackpot Bay, 148° 16' 39" W. The shore of Chenaga Island bounds the eastern limit on the southern end of the survey area. Data acquisition was conducted from September 28, 1996 (DN 272) to October 15, 1996 (DN 289).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER survey launches as noted below:

Vessel	EDP #	Operation
Rainier	2120	Sound Velocity Cast
RA-2	2122	Hydrography, Shoreline
RA-4	2124	Hydrography
RA-5	2125	Hydrography, Shoreline, Bottom Samples, Sound Velocity Cast
RA-6	2126	Hydrography

✓

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and processed using the Hydrographic Data Acquisition and Processing System (HDAPS.) A complete listing of software for HDAPS is included in Appendix VI. *

E. SONAR EQUIPMENT ✓

None.

* Filed with the hydrographic data.

F. SOUNDING EQUIPMENT

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. Serial numbers are included on the headers of the daily Raw Master Printouts.* No new problems which affect survey data were encountered. All DSF-6000N soundings were acquired in meters using the High + Low, high frequency digitized setting. On DN 289 the shoreline hydrography was collected with the low frequency digitized setting from fix 21727 to 21769.1. The field data was converted to FATHOMS during office processing and confiled on the smooth sheet.

G. CORRECTIONS TO ECHO SOUNDINGS

Correctors for the velocity of sound through water were determined from the casts tabulated below. Velocity table 10 was applied to all sounding lines aquired inside Jackpot Bay. Velocity table 11 was not applied to the data during processing. This cast was compared to the cast aquired DN 276, velocity table #8 and was found to be in agreement with differences less than 0.07%.

CAST # / Velocity Table #	DN	Cast Position	Deepest Depth (m)	Applicable DN
8	276	60° 17' 06" N 148° 09' 54"W	358	272-281
10	277	60° 20' 10" N 148° 15' 53"W	107	Inside Jackpot Bay
11	282	60° 23' 11" N 148° 00' 58"W	182	Not Applied

Casts # 8 & 11 were taken outside of the survey area.

The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 219), calibrated January 16, 1996. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 2.11 (1995), in accordance with Hydrographic Survey Guideline (HSG) No. 69. A printout of the Sound Velocity Corrector Table used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV* Sounding Equipment Calibrations and Corrections".

A static transducer depth was determined using FPM Fig 2.2 for vessels 2122-2125 in the spring of 1996. Settlement and squat correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.3, and are included with project data for OPR-P139-RA. The data for vessels 2122-2126 were collected in Shilshole Bay, Washington in the spring of 1996. All offset tables* contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 2-6 correspond to the last digit of the vessel number. The offset tables are included with project data for OPR-P139-RA. The launches are not equipped with heave, roll and pitch sensors.

* Filed with the hydrographic data.

Tide Correctors ✓

Predicted tides for the project were provided on diskette by the Coastal and Estuarine Oceanography Branch (N/OES334) through N/CS31 for the Cordova, Alaska reference station (945-4050). HDAPS listings of the data used in generating tide corrector tables are included in Appendix V* of this report. Tidal correctors as provided in the project instructions for H-10723 are:

Zone	Time Correction	Height Correction
33	-0 hr 00 min	x0.91

✓

Valdez, Alaska (945-4240) and Cordova, Alaska (945-4050) are the primary control stations for datum determination at all subordinate stations. RAINIER personnel installed Sutron 8200 GOES-transmitter equipped tide gages at Point Helen (945-4671) and Chenega Island (945-4777) on September 2, 1996. Five new bench marks were installed at Point Helen. Six of the seven historical benchmarks for Chenega were recovered. Refer to the Field Tide Notes and supporting data in Appendix V* for individual gage performance and level closure information. This information has been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded to N/OES23 in accordance with FPM 4.2.3. Approved Tide Note dated January 16, 1997 is attached to this report.

H. CONTROL STATIONS (See EVAL RPT., Sec. H)

The horizontal datum for this project is NAD 83. One new station, NUKEM, ~~as~~ was established on the northernmost rock of the Pleiades Islands using static GPS observations from station ROCK with a check to DUKE. The list of control stations used for this survey ~~are listed in Appendix H~~ is included in this report. See the OPR-P139-RA-96 Horizontal Control Report for more information.

I. HYDROGRAPHIC POSITION CONTROL (See EVAL RPT., Sec. I)

All soundings were positioned using differential GPS. Primary control was a VHF differential reference station installed at NUKEM and repeated on a second VHF frequency by the ship. In areas within Jackpot Bay the US Coast Guard Beacon at CAPE HINCHINBROOK was use for primary positioning due to the topography of the area degrading the line of sight signal from the VHF station. Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM.Two observations of position were made from two different DGPS base stations, NUKEM and DUKE or the US Coast Guard Beacon at CAPE HINCHINBROOK while the launches were rafted together with their GPS antennae within 2-3 meters of each other. RAINIER also used SHIPDIM, version 2.2R (April 1996) with a Trimble Centurion P-code receiver and an Ashtech sensor (both differentially-corrected) to monitor the performance of the USCG Beacon. NUKEM or DUKE were compared to CAPE HINCHINBROOK during 12-hour daily comparisons and occasional performance checks. Some outliers were noted, but none indicated systematic or continuous errors in the CAPE HINCHINBROOK beacon. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-P139-RA.

* Filed with the hydrographic data.

J. SHORELINE (See EVAL RPT., Sec. J)

The shoreline manuscript from Coastal Mapping survey CM-92012 (DM - 10295, DM - 10296) was supplied by N/CS341 in Standard Digital Data Exchange Format (SDDEF). The digital file was projected to the survey grid with OPR-P139-RA-96 geodetic parameters using program Shore version 2.0, provided by N/CS32, and plotted on the survey using HDAPS.

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch is 5-15 meters offshore of apparent low tide, generally 0-5 meters of depth at Mean Lower Low Water. New offshore features were hydrographically positioned and are illustrated in black on the final field sheet. Features shown in pencil inshore of the NALL are the hydrographer's representation of the shoreline while slowly transiting along the shore. See statement above regarding revisions to shoreline manuscript.

The DM rock located at 60° 21' 51.66" N, 148° 13' 15.03"W was not identified during shoreline verification. A detached positon disproval was aquired on DN 284, VN 2122, Fix 20626. The location was searched for visual signs of the rock with the echosounder running to show signs of shoaling in the area. The rock was not located and it is recommended by the hydrographer to not chart the rock. Concur.

Charted features were compared to enlargements of chart 16701, 15th Edition, July 1990 supplied by N/CS31. Charted offshore shoreline features which were not found on the manuscript were verified by field positions. All features originate with the 1933 hydrographic surveys. Charted shoreline should be superseded by the manuscript shoreline and field work as shown on the final field Detached Position and Bottom Sample plot. Concur. Revisions to the shoreline manuscript annotated on the Detached Position Plot were analyzed during office processing and shown on the smooth sheet as warranted. (2) Concurrence is based on review of raw data.

Two charted rocks were disproved and several charted rocks were repositioned hydrographically. The following table is a list of charted rock disprovals and repositioned charted rocks. The hydrographer recommends removing the disproved charted rocks from the chart. The hyrographer also recommends charting the repositioned rocks as depicted on the final field Detached Position and Bottom Sample plot removing the charted rocks from their current position. Concur Chart these features as depicted on the smooth sheet.

Item	Latitude	Longitude	DN	VN	Fix	
✓ Rock Disproval	60° 19' 22.17" N	148° 12' 49.84"W	283	2125	50123	Found 50 meters inshore of charted pos.
✓ Rock Disproval	60° 18' 40.90" N	148° 12' 35.60"W	283	2125	50129	
✓ Rock, east extent of reef	60° 19' 20.15" N	148° 16' 26.25"W	288	2122	20813	
✓ Rock, west extent of reef	60° 19' ~~16.38~~ 19.36" N	148° 16' 28.65"W	288	2122	20814	
✓ Rock, extent of ledge	60° 20' 41.19" N	148° 12' 33.25"W	289	2122	21727	
✓ Rock (4)	60° 20' 41.37" N	148° 12' 37.51"W	289	2122	21729	
✓ Rock (7)	60° 21' 05.12" N	148° 14' 08.65"W	289	2122	21760	
✓ Rock	60° 19' 22.26" N	148° 12' 52.90"W	289	2122	21767	See Fix 50123
✓ Rock, extent of ledge	60° 19' 42.83" N	148° 12' 49.32"W	289	2122	21773	
✓ Rock, extent of ledge	60° 19' 40.47" N	148° 12' 47.57"W	289	2122	21774	

K. CROSSLINES ✓

Crosslines agreed within 1 meter with mainscheme hydrography, except in areas of steep bathymetry. There was a total of 19.8 nautical miles of crosslines, comprising 16.4% of mainscheme hydrography.

L. JUNCTIONS (See EVAL RPT., Sec. L)

This survey junctions with contemporary surveys H-10725, 1:10,000, 1996 on the northeast, and H-10722, 1:10,000, 1996 on the south. Soundings on these 1996 surveys were found to be in good agreement. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

M. COMPARISON WITH PRIOR SURVEYS (See EVAL RPT., Sec. M)

Prior surveys H-5408, 1:20,000, 193~~7~~3, ~~and~~ H-5409, 1:~~1~~20.000, 1933 and H-8389 (1957), 1:10,000 cover this survey area. The prior soundings agreed well with the present survey. A 3 fathom* (5.5 m) sounding charted at 60° 18' 16" N, 148° 12' 21" W, was not found as charted. The location of the charted sounding was developed with 10 meter line spacing on DN 280, VN 2126, Fix 60732 to 60779. The hydrographer recommends removing this sounding from the chart and superceding it with data from this survey. Concur. Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey. The 3 Fm sounding discussed above originates from prior survey H-8389 (1957) and has been portrayed more seaward on the chart. The prior survey shows this depth approximately 100 meters further west than currently charted.

N. ITEM INVESTIGATIONS ✓

None.

O. COMPARISON WITH THE CHART (See EVAL RPT., Sec. O)

Comparison of soundings is described in Section M. Non-sounding features are discussed in Section J.

Dangers to Navigation ✓

Seven (7) dangers to navigation within the limits of H-10723 were reported to the Seventeenth Coast Guard District, October 23, 1996. Copies of the correspondence can be found in ~~Appendix I of~~ this report.

P. ADEQUACY OF SURVEY ✓

Survey H-10723 is complete and adequate to supersede prior soundings and features in their common areas. Concur.

Q. AIDS TO NAVIGATION ✓

No Aids to Navigation exist within the survey area. Concur.

R. STATISTICS ✓

NM Hydrography	230.1
Velocity Casts	3
Detached Positions	21
Selected Soundings	11,637 ✓
Bottom Samples	25
Tide Stations	2
NM^2 Hydrography	5.3

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. No unusual tidal currents or magnetic variations were found during this survey. Secchi disk observations were performed and indicate that water visibility was approximately ten meters throughout the survey area.

T. RECOMMENDATIONS ✓

None.

U. REFERRAL TO REPORTS ✓

The following supplemental reports contain additional information relevant to this survey:

Title	Date Sent	Office
OPR-P139-RA Horizontal Control Report	November, 1996	N/CS34
OPR-P139-RA 1996 Coast Pilot Report	November, 1996	N/CS26
Project related data for OPR-P139-RA	Incremental	N/CS34
Secchi Disk Observations for OPR-P139-RA	November, 1996	N/CS31

Respectfully Submitted,

James M. Crocker
Lieutenant (jg), NOAA

Approved and Forwarded,

Dean R. Seidel
Captain, NOAA
Commanding Officer

APPROVAL SHEET

for

H-10723

RA-10-26-96

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the 1994 version of the Field Procedures Manual in producing this survey. The data were examined daily during data acquisition and processing.

The field sheet and accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.

Dean R. Seidel
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 29 Oct 1996

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
1	G	060:14:26.408	148:00:42.205	18	250	0.0	0.0		09/03/96	NUKEM
2	G	060:15:37.435	148:18:06.007	18	250	0.0	0.0		10/07/96	DUKE
3	L	060:09:11.260	147:45:58.680	27	257	0.0	0.0		10/07/96	PT. HELEN LIGHT LL#25925
4	L	060:18:46.233	147:55:04.532	23	257	0.0	0.0		10/07/96	NEW YEAR ISLAND LIGHT LL#25915
5	L	060:14:22.912	148:00:37.765	26	257	0.0	0.0		10/07/96	PLEIADES LIGHT LL#25920
6	B	060:14:18.000	146:38:48.000	0	250	0.0	0.0		00/00/00	CAPE HINCHINBROOK USCG BEACON
7	B	061:03:24.000	146:41:48.000	0	250	0.0	0.0		00/00/00	POTATO POINT USCG BEACON

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

NOAA Ship RAINIER

October 24, 1996

Commander
Seventeenth Coast Guard District
Post Office Box 3-5000
Juneau, Alaska 99802

ADVANCE INFORMATION

Dear Sir:

During the processing of hydrographic survey H-10723 in Knight Island Passage, Prince William Sound, seven dangers to navigation has been discovered. These dangers affect the following charts:

Number	Edition	Date	Scale	Datum
16700	24th ED.	92/01	1:200,000	NAD83
16701	16th ED.	96/06	1:81,436	NAD83
16705	15th ED.	90/09	1:80,000	NAD83

It is recommended that these dangers to navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Branch at (206) 526-6835.

Sincerely,

Dean R. Seidel
Captain, NOAA
Commanding Officer
NOAA Ship RAINIER

Enclosure

cc: DMA/HTC
PMC
N/CS262

DANGERS TO NAVIGATION

OPR-P139-RA **SOUTHWEST PRINCE WILLIAM SOUND, AK**

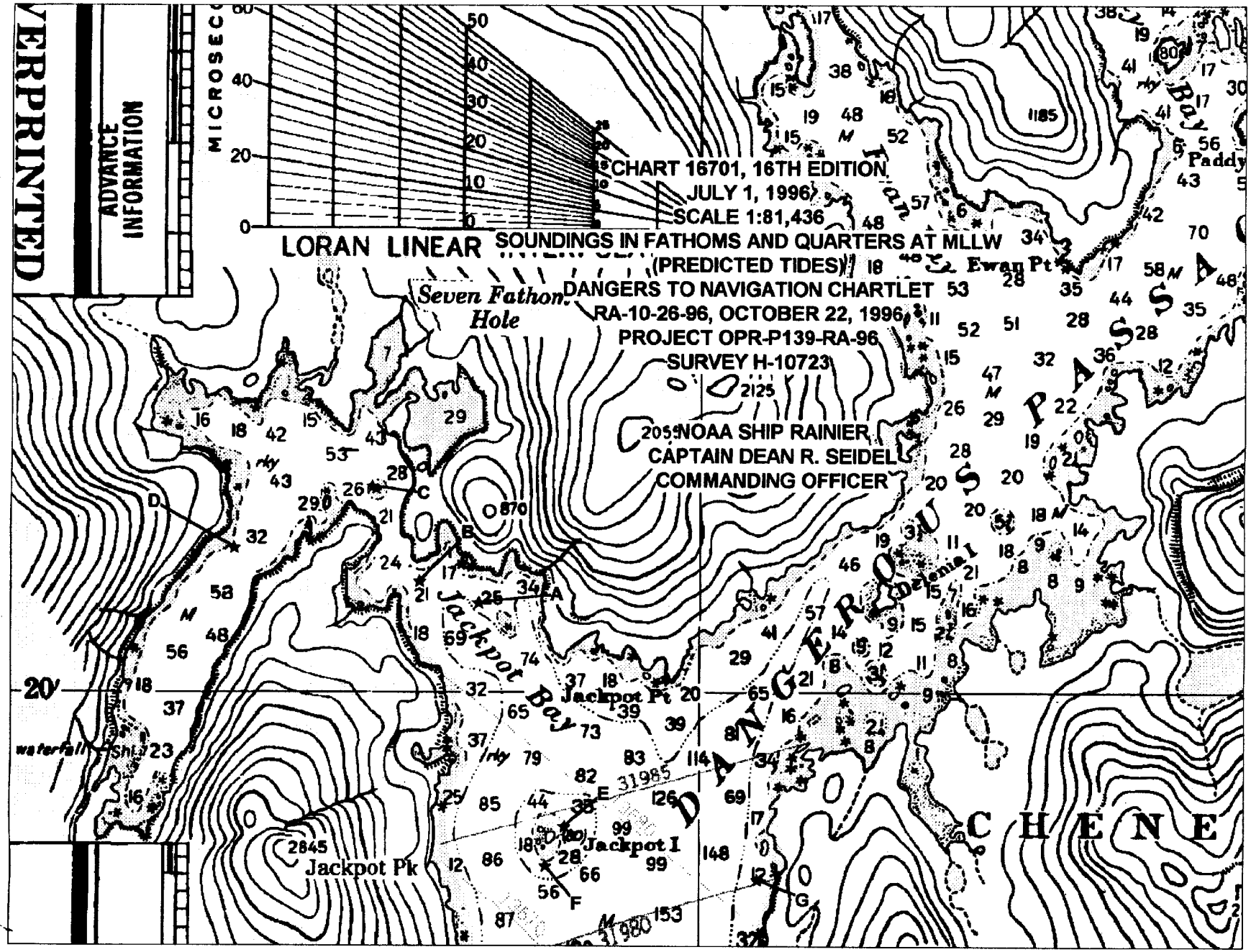
REGISTRY NUMBER: **H-10723**

ADVANCE INFORMATION

AFFECTED CHARTS:

CHART	EDITION NUMBER	DATE	SCALE
16700	24 TH ED.	92/01	1:200,000
16701	16 TH ED.	96/06	1:81,436
16705	15 TH ED.	90/09	1:80,000

ITEM	FIX #	DANGER	CHART DEPTH	DEPTH (M)	LATITUDE (N)	LONGITUDE (W)
A	20167+1	SHOAL	4 1/4 FM	8.1	060:20:30.488	148:12:26.497
B	60604+6	SHOAL	6 3/4 FM	12.4	060:20:37.550	148:13:05.450
C	20761+0	ROCK	COVERS 1/2 FM	1.1	060:21:09.038	148:13:36.552
D	60420+7	SHOAL	5 1/2 FM	10.3	060:20:48.779	148:15:07.824
E	50064+2	SHOAL	3 1/4 FM	6.1	060:19:17.317	148:11:28.974
F	50034+2	SHOAL	4 3/4 FM	9	060:19:04.303	148:11:42.070
G	50112+1	SHOAL	2 1/4 FM	4.3	060:18:59.907	148:09:21.430


VERPRINTED
ADVANCE INFORMATION
MICROSEC
LORAN LINEAR
CHART 16701, 16TH EDITION
JULY 1, 1996
SCALE 1:81,436
SOUNDINGS IN FATHOMS AND QUARTERS AT MLLW
(PREDICTED TIDES)
DANGERS TO NAVIGATION CHARTLET
RA-10-26-96, OCTOBER 22, 1996
PROJECT OPR-P139-RA-96
SURVEY H-10723
NOAA SHIP RAINIER
CAPTAIN DEAN R. SEIDEL
COMMANDING OFFICER
Seven Fathom Hole
Jackpot Bay
Jackpot Pt
Jackpot I
Jackpot Pk
Ewan Pt
Paddy
Deienia I
DANGEROUS
PASSAGE
CHENE
waterfall
20'

ADVANCE INFORMATION

P 232154Z OCT 96
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
BT
UNCLAS

DANGER TO NAV #: RA-19-96

NOAA SHIP RAINIER HAS LOCATED 7 DANGERS TO NAVIGATION IN SOUTHWEST PRINCE WILLIAM SOUND, AK (PROJECT: OPR-P139-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10723.

THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

AFFECTED CHARTS:

CHART	EDITION NUMBER	DATE	SCALE
16700	24TH ED.	92/01	1:200,000
16701	16TH ED.	96/06	1:81,436
16705	15TH ED.	90/09	1:80,000

ALL CHART DATUM ARE NAD83.

ITEM	DANGER	DEPTH	LATITUDE (N)	LONGITUDE (W)	FIX NUMBER
A	SHOAL	4 1/4 FM	060:20:30.488	148:12:26.497	20167+1
B	SHOAL	6 3/4 FM	060:20:37.550	148:13:05.450	60604+6
C	ROCK COVERS	1/2 FM	060:21:09.038	148:13:36.552	20761+0
D	SHOAL	5 1/2 FM	060:20:48.779	148:15:07.824	60420+7
E	SHOAL	3 1/4 FM	060:19:17.317	148:11:28.974	50064+2
F	SHOAL	4 3/4 FM	060:19:04.303	148:11:42.070	50034+2
G	SHOAL	2 1/4 FM	060:18:59.907	148:09:21.430	50112+1

THIS IS ADVANCE INFORMATION SUBJECT OT OFFICE REVIEW.

QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC BRANCH AT (206) 526-6835.

A LETTER WITH ATTACHED CHARTLET WILL BE MAILED TO CONFIRM

ADVANCE
INFORMATION

THIS MESSAGE.
BT

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF COAST SURVEY
Pacific Hydrographic Branch
Seattle, Washington 98115-0070

September 24, 1997

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 25517
Juneau, AK 99802

Dear Sir:

During office review of hydrographic survey H-10723, Alaska, Southwest Prince William Sound, Jackpot Bay and Vicinity, three (3) additional dangers to navigation have been identified. These potential dangers affect the following chart:

Chart	Edition/Date	Scale	Datum
16701	16th/June 1, 1996	1:81,436	NAD 83

The attached information is provided for publication in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Branch at (206) 526-6835.

Sincerely,

Kathryn Timmons

Kathryn Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Enclosures

cc: NIMA
N/CS261

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10723

Survey Title: State: ALASKA
Locality: SOUTHWEST PRINCE WILLIAM SOUND
Sublocality: JACKPOT BAY AND VICINITY

Project Number: OPR-P139-RA, NOAA Ship RAINIER

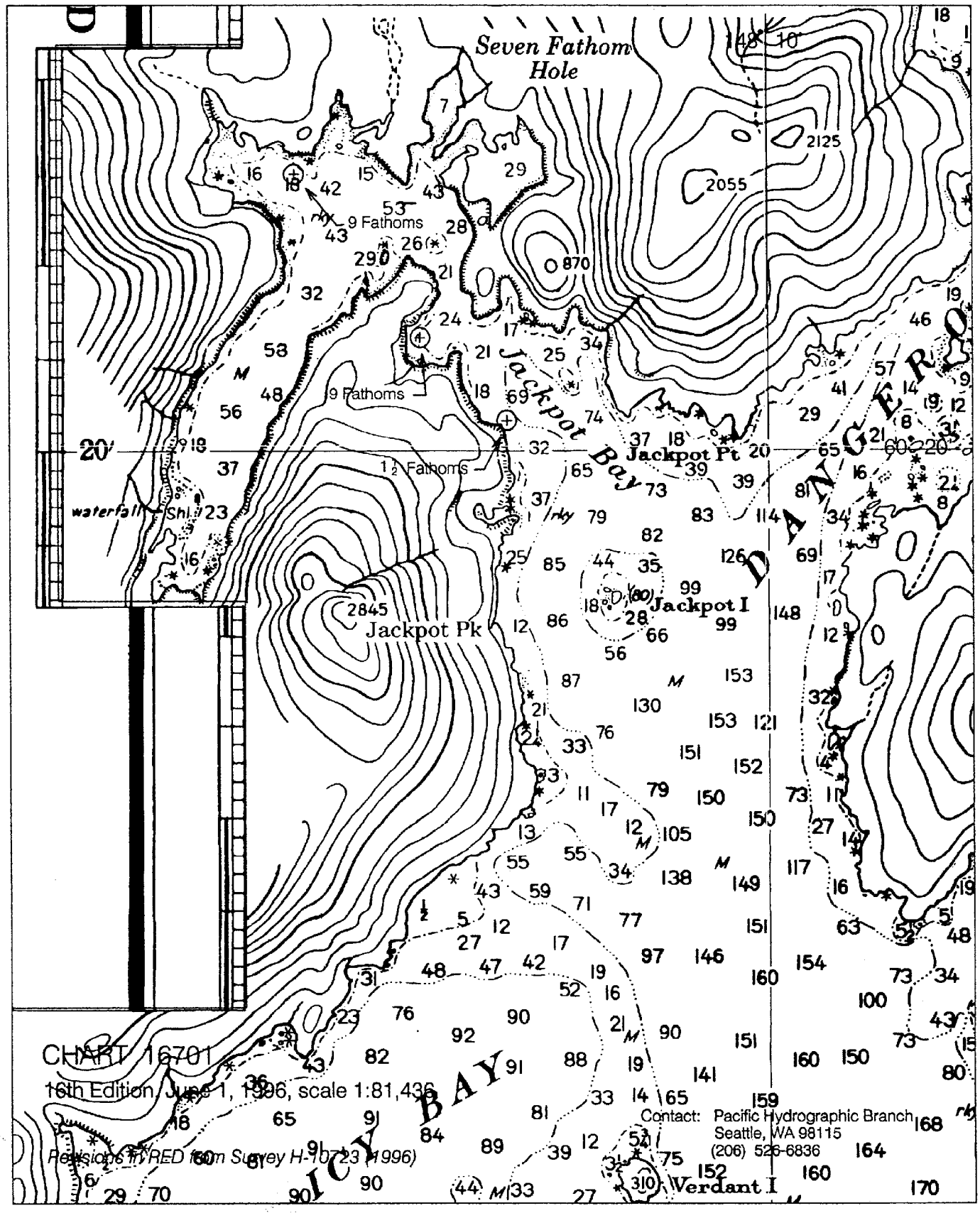
Survey Date: September 28- October 15, 1996

Features are reduced to Mean Lower Low Water (MLLW) using approved tides and are positioned on NAD 83.

Chart affected: 16701, 16th Edition/August 21, 1996, scale 1:81,436, NAD 83

DANGER TO NAVIGATION	LATITUDE(N)	LONGITUDE(W)
Shoal, covers 1 1/2 fathoms	60/20/07.7	148/12/47.3
Shoal, covers 9 fathoms	60/20/34.4	148/13/43.0
Shoal, covers 9 fathoms	60/21/26.7	148/15/03.4

Questions concerning this report should be directed to the Chief, Pacific Hydrographic Branch at (206)526-6835.


Seven Fathom Hole
9 Fathoms
9 Fathoms
1½ Fathoms
Jackpot Bay
Jackpot Pt
Jackpot I
Jackpot Pk
Verdant I
DANGEROUS
ICY BAY
waterfall
Shl
2125
2055
870
2845
CHART 16701
16th Edition, June 1, 1996, scale 1:81,436
Revision 6 in RED from Survey H-10723 (1996)
Contact: Pacific Hydrographic Branch
Seattle, WA 98115
(206) 526-6836

Limited Shoreline Verification: The New Rules

First, understand that the fundamental difference between last year and this year is that the amount of shoreline we must verify is determined by US, not strictly specified in the Project Instructions.

Procedures:

1) Determine distance from shore that is the MINIMUM working distance necessary for the survey. Take into account likely vessel traffic, bathymetry, complexity of the shoreline from prior surveys and the chart, and weather (sea) conditions experienced in the area. Use greater distances if shallow depths prevail, or if swell is severe. Even in steep foreshore bathymetry, do not go closer than 3 launch lengths (30 meters), unless vessel usage indicates that the area is used (e.g. a landing ramp is on shore, or an extremely narrow passage is used by fishing vessels to reach a certain bay.)

2) Draw the inshore limit determined in (1) on the boat sheet. Collecting data along this line may or may not be feasible, due to tides and project logistics, but the boat sheet line may be used to delimit mainscheme and development hydrography until such a "buffer" line is or may be needed.

3) Search for and develop all features seaward of the line drawn in (2). Use low water for this search, if possible. Combining this search with the acquisition of the data along the "buffer" line may be possible in areas which are not too complex. Detached positions are required only if a feature is found offshore of the NALL line and either more than 1 mm away from any manuscript feature or is mis-represented by the manuscript. If a charted or manuscript feature located offshore of the line is NOT found, a full disproval is required.

4) Annotate the field copies of the boat sheet (which by definition includes the charted, manuscript, and significant prior survey features) showing that the shoreline features offshore of the NALL each have a full disposition. These copies are bound and used to create the final field sheet, and submitted as official survey records.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: January 16, 1997

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P139-RA
HYDROGRAPHIC SHEET: H-10723

LOCALITY: Jackpot Bay and Vicinity, Southwest Prince William Sound, Alaska

TIME PERIOD: September 28 - October 15, 1996

TIDE STATION USED: 945-4777 Chenega Island, Southwest End, AK
Lat. 60° 17.2'N Lon. 148° 07.2'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.300 meters

TIDE STATION USED: 945-4671 Point Helen, Knight Island, AK
Lat. 60° 09.2'N Lon. 147° 46.0'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.240 meters

TIDE STATION USED: 945-4691 Herring Point, Knight Island Passage, AK
Lat. 60° 28.5'N Lon. 147° 47.5'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.362 meters

TIDE STATION USED: 945-4240 Valdez, AK
Lat. 61° 07.5'N Lon. 146° 21.7'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.389 meters

REMARKS: RECOMMENDED ZONING

Use zones identified as: PWS20, PWS33, PWS34 & PWS35

Refer to attachment(s) for zoning information.

Note: Provided time series data are tabulated in metric units (meters) and on Greenwich Mean Time.

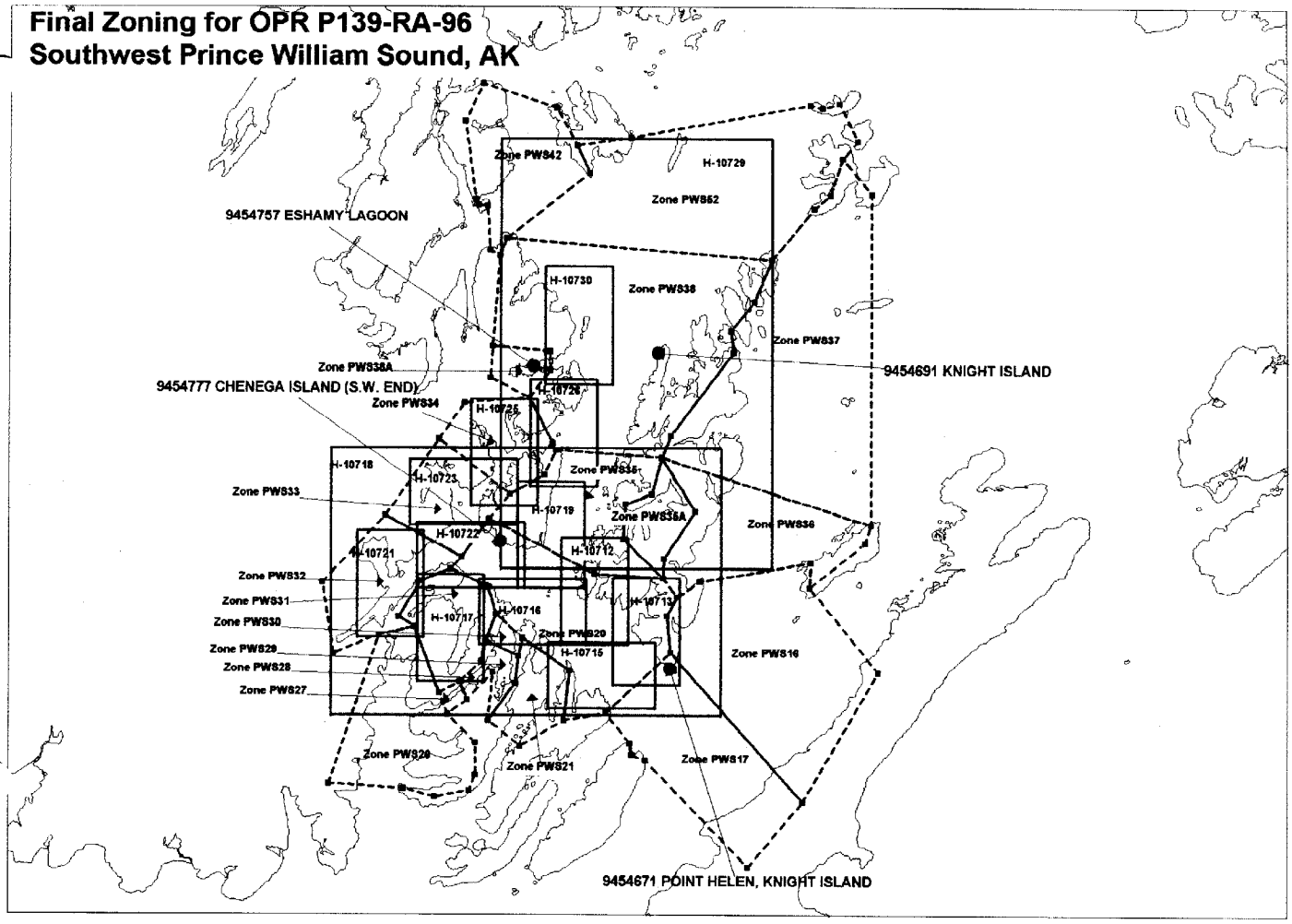
CHIEF, TIDAL ANALYSIS BRANCH

Final tide zone nodal point locations for OPR P139-RA-96.
Sheet H-10723

Format: Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

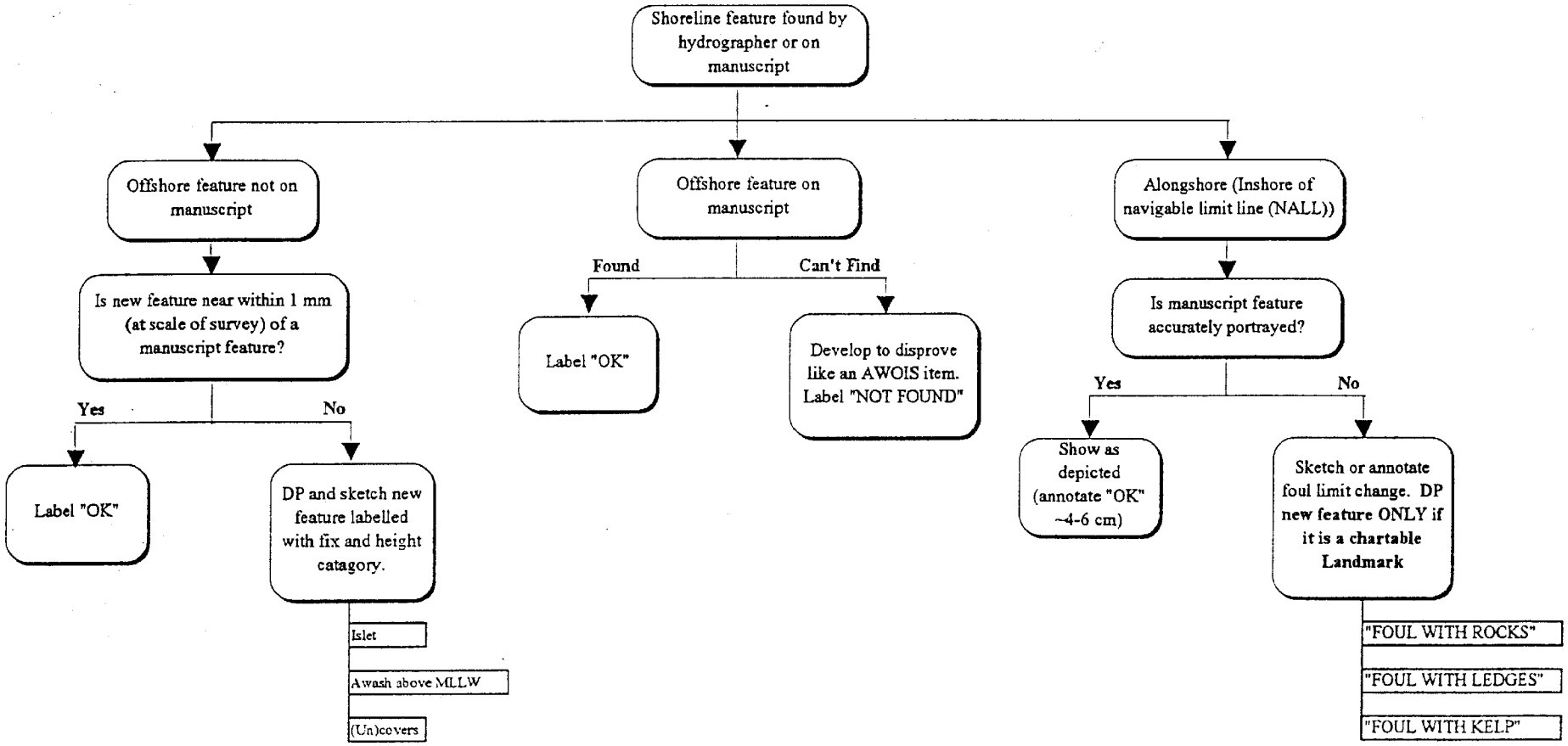
	Tide Station Order	AVG Time Correction	Range Correction
Zone PWS20			
-148.121387 60.20888	9454777	Direct	Direct
-148.138224 60.236579	9454671	Direct	1.03
-148.213991 60.255044	9454240	Direct	0.97
-148.192103 60.266795			
-148.135913 60.305498			
-147.921026 60.250008			
-147.781279 60.245812			
-147.752622 60.226545			
-147.77381 60.206587			
-147.766071 60.169257			
-147.897377 60.108049			
-147.983011 60.100932			
-147.971537 60.150964			
-148.067509 60.184539			
-148.121387 60.20888			
Zone PWS33			
-148.347003 60.308763	9454777	Direct	0.98
-148.237563 60.386823	9454671	Direct	Direct
-148.094448 60.330586	9454240	Direct	0.95
-148.135913 60.305498			
-148.192103 60.266795			
-148.347003 60.308763			
Zone PWS34			
-148.237563 60.386823	9454777	Direct	Direct
-148.185368 60.423755	9454691	Direct	0.98
-148.054039 60.428791	9454240	Direct	0.97
-148.006895 60.382627			
-148.00016 60.375912			
-148.023732 60.350731			
-148.094448 60.330586			
-148.237563 60.386823			
Zone PWS35			
-148.094448 60.330586	9454777	Direct	1.01
-148.023732 60.350731	9454691	Direct	0.99
-148.00016 60.375912	9454240	Direct	0.98
-147.78401 60.368002			
-147.804609 60.330991			
-147.858271 60.320562			
-147.862937 60.284639			

-147.781279	60.245812
-147.921026	60.250008
-148.135913	60.305498
-148.094448	60.330586



ZONE	TG1	TC1	RR1	TG2	TC2	RR2	TG3	TC3	RR3
PWS16	9454671	0	1.01	9454777	0	0.99	9454240	0	0.96
PWS17	9454671	0	1.00	9454777	0	0.98	9454240	0	0.95
PWS20	9454777	0	1.00	9454671	0	1.03	9454240	0	0.97
PWS21	9454671	-6	1.01	9454777	-6	0.99	9454240	-6	0.96
PWS26	9454671	-12	0.93	9454777	-12	0.91	9454240	-12	0.88
PWS27	9454671	-6	0.95	9454777	-6	0.93	9454240	-6	0.90
PWS28	9454671	0	0.97	9454777	0	0.95	9454240	0	0.92
PWS29	9454671	0	0.99	9454777	0	0.97	9454240	0	0.94
PWS30	9454671	0	1.00	9454777	0	0.98	9454240	0	0.95
PWS31	9454777	0	0.98	9454671	0	1.00	9454240	0	0.95
PWS32	9454777	0	0.97	9454671	0	0.99	9454240	0	0.94
PWS33	9454777	0	0.98	9454671	0	1.00	9454240	0	0.95
PWS34	9454777	0	1.00	9454691	0	0.98	9454240	0	0.97
PWS35	9454777	0	1.01	9454691	0	0.99	9454240	0	0.98
PWS36	9454671	0	1.03	9454691	0	0.98	9454240	0	0.97
PWS37	9454691	0	0.99	9454671	0	1.04	9454240	0	0.98
PWS38	9454691	0	1.00	9454777	0	1.02	9454240	0	0.99
PWS42	9454691	0	1.01	9454777	0	1.02	9454240	0	0.99
PWS52	9454691	0	0.99	9454777	0	1.01	9454240	0	0.98
PWS35A	9454777	0	1.03	9454691	0	1.01	9454240	0	1.00
PWS38A	9454757	0	1.00	9454691	0	0.95	9454777	0	0.97

Shoreline Decision Tree



Prepared by Mark S. Larsen

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10723

Name on Survey	A ON CHART NO. 16701, 16700	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (title)	X		X							1
CHENEGA ISLAND	X		X							2
DANGEROUS PASSAGE	X		X							3
JACKPOT BAY	X		X							4
JACKPOT ISLAND	X		X							5
PRINCE WILLIAM SOUND	X		X							6
(title)										7
SEVEN FATHOM HOLE (bay)	X		X							8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
					Approved:					20
										21
					Chief Geographer					22
										23
					APR 10 1997					24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H)
(9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
H-10723

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	NA
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	NA

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	2					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):	DM-10295 & DM-10296
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	Chart 16701, 16th ED., June 1, 1996

OFFICE PROCESSING ACTIVITIES
The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS ~~REVISED~~ Selected			11,637
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	107.5		107.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		14.0	14.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		20.0	20.0
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	107.5	34.0	141.5

Pre-processing Examination by Pacific Hydrographic Branch	*Beginning Date* 12/3/96	*Ending Date* 12/3/96
Verification of Field Data by E. Domingo, R. Mayor	*Time (Hours)* 107.5	*Ending Date* 8/22/97
Verification Check by B. Olmstead	*Time (Hours)* 5	*Ending Date* 9/19/97
Evaluation and Analysis by I. Almacen	*Time (Hours)* 34.0	*Ending Date* 9/4/97
Inspection by B. Olmstead	*Time (Hours)* 8	*Ending Date* 9/24/97

EVALUATION REPORT

H-10723

A. PROJECT

Project information is discussed in the hydrographer's report.

B. AREA SURVEYED

The survey area is discussed in the hydrographer's report with the following supplemental information.

The inshore area is generally consist of scattered rocks and small islets with patches of rocky and gravel beaches. The bottom is made up of pebble, gravel, sand and mud mixed with broken shells. Depth range from 0.0 to 152.0 fathoms.

The hydrographer has determined during this survey the inshore limits of safe navigation by defining a Navigable Area Limit Line (NALL) within the area of the survey in accordance with Attachment 1 of the Project Instructions. Charted features inshore of this limit line have been addressed by the hydrographer, however, no positional information were obtained during survey operations. These inshore features should be retained as charted. A page-size chartlet of the survey area indicating the limits of supersession is included in this report as Attachment A.

C. SURVEY VESSELS

Survey vessel information is found in the hydrographer's report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data were processed using the same Hydrographic Data Acquisition/Processing System (HDAPS) software used by the hydrographer, the Hydrographic Processing System (HPS), AutoCad, Version 12 and MicroStation 95.

At the time of the survey certification the format for transmission of digital data had not been formally approved. In the interim, digital data for this survey exists in the standard HPS format which is a database format using the .dbf extension. In addition, the sounding plot was created with .dbf (extension) and enhanced using the MicroStation system, are filed both in the MicrroStation drawing format, .dwg (extension); and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these files will be retained at PHB until data transfer protocols are developed and approved.

The drawing files necessarily contain information which is not part of the HPS data set such

as geographic names text, line-type data, and minor symbolization. In addition, those soundings deleted from the drawing for clarity purposes, remain unrevised in the HPS digital files to preserve the integrity of the original hydrographic data set. Cartographic codes used to describe the digital data are those authorized by the Hydrographic Survey Guideline No. 75 and No. 35.

The field sheet parameters have been revised to center the hydrography on the office plot. Data is plotted using a Modified Transverse Mercator projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

Side scan sonar was not used during this survey.

F. SOUNDING EQUIPMENT

Sounding equipment is discussed in the hydrographer's report.

G. CORRECTIONS TO SOUNDINGS

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with present NOS specifications. Actual tide reduction is derived from Chenega Island, Southwest End, Alaska gage (945-4777) and Point Helen, Knight Island, Alaska gage (945-4671). Tide data from the gages at Herring Point and Valdez, Alaska were not used for sounding reduction on this survey. Refer to the approved tide note attached to this report concerning recommended tidal zoning.

H. CONTROL STATIONS

The control stations used during this survey are adequately discussed in the hydrographer's report.

The MicroStation generated smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with NGS program NADCON. Data based on NAD 27 may be referenced to this survey by applying the following corrections.

Latitude: -2.264 seconds (-70.071 meters)
Longitude: 7.373 seconds (113.135 meters)

I. HYDROGRAPHIC POSITION CONTROL

Hydrographic position control is adequately discussed in the hydrographer's report. A horizontal dilution of precision (HDOP) limits of 3.75 was computed for survey operations.

The maximum HDOP allowable limit has not been exceeded during this survey and the quality of data obtained is considered good. The reference site confirmation test and the daily DGPS performance checks conducted in the field were adequate.

J. SHORELINE

The "limited" shoreline verification method applied to this survey is adequately discussed in the hydrographer's report. The digitized shoreline file and the survey file were merged during Microstation processing.

There are no significant differences noted in the mean high water line configuration between the present and the recently compiled shoreline maps of the area. However, a comparison with chart 16701 shows a shift and change in the configuration of the presently charted shoreline along Jackpot Bay including Jackpot Island and the portion of Dangerous Passage covered by this survey. These shoreline changes could primarily be the result of ground movement caused by frequent earthquake activity around the area. The other changes noted could be due to the differences in the accuracy of MHWL determination, differences in reference datum used and the probable error in chart compilation of the area.

A few new rocks were found by the hydrographer inshore of the NALL line and near the mean high water line. However, these features were not positioned during survey operations and have not been shown on smooth sheet.

The charted shoreline should be superseded by the latest manuscript shoreline and results of the field shoreline verification as shown on the smooth sheet.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10723 junctions with the following surveys.

Survey	Year	Scale	Area
H-10722	1996	1:10,000	South
H-10725	1996	1:10,000	Northeast

The junction with survey H-10722 was not formally completed as this survey was previously processed and approved for charting. Soundings and depth curves are in good agreement. However, survey H-10723 should be used within the common area of both surveys. The junction with survey H-10725 is complete.

M. COMPARISON WITH PRIOR SURVEYS

Survey H-10723 was compared with the following prior surveys.

H-5408 (1933), scale 1:20,000
H-5409 (1933), scale 1:20,000
H-8389 (1957), scale 1:10,000

Surveys H-5408, H-5409 and H-8389 are the prior USC&GS hydrographic surveys that cover the area of Jackpot Bay and the southern section of Dangerous Passage. Prior surveys H-5409 and H-8389 cover the same area along the southern extremities of the present survey. Comparisons with these surveys are considered satisfactory. Prior soundings and other features located offshore of the NALL line were adequately addressed during survey operations. A more thorough coverage of the area has been undertaken during this recent survey. The present depths were found to be generally shoaler by about 1.0 to 5.0 fathoms showing an indication of the usual uplifting trend common around Prince William Sound. This change in the bottom configuration is primarily the result of tectonic activity in the area triggered by the earthquake of 1964. The other changes noted could be attributed to the increased bottom coverage of the area and the application of more modern surveying methods.

Prior survey H-8389 covers a common area with survey H-5409 along the southern extremities of the present survey. Survey H-5409 was superseded by the 1957 survey within the common area of coverage. Sounding agreement is good, with the present soundings generally deeper than the prior by as much as 5.0 fathoms along the middle section of the passage.

Survey H-10723 is adequate to supersede the prior surveys within the common area.

M. ITEM INVESTIGATIONS

There were no AWOIS item investigations assigned to this survey.

O. COMPARISON WITH CHART

Survey H-10723 was compared with the following chart.

Chart	Edition	Date	Scale	Datum
16701	15th	July 21, 1990	1:81,436	NAD 83
16701	16th	June 1, 1996	1:81,436	NAD 83

a. Hydrography

The charted hydrography on the 15th and 16th editions of chart 16701originate with the previously mentioned prior hydrographic surveys. These prior surveys have been adequately addressed in the preceding section of this report and require no further discussion.

The effects of the 1964 earthquake in Prince William Sound were considered in the comparison of this survey in accordance with Hydrographic Survey Guideline No. 39. No reasonable adjustment value could be derived from the prior survey information. However, according to the Coast Pilot report, a 4.9 feet bottom uplift is known to have occurred in Chenega Island which is situated about a mile east of the present survey.

Survey H-10723 is adequate to supersede charted hydrography within the common area of coverage. However, considering the close proximity of the NALL line along the shore as determined by the hydrographer and the scale of the existing chart, the present survey could also be considered adequate to supersede the area inshore of the NALL line, with the exception of the following charted features that should be revised based on the latest information or retained as charted. These shoreline features were visually verified by the hydrographer during this survey.

(1) The charted small islet at latitude 60/19/25N, longitude 148/15/57W, should be shown as a reef as depicted on the smooth sheet.

(2) The charted islet surrounded by a ledge connected to the shore at latitude 60/18/16N, longitude 148/12/30W, should be shown as a point of land based on the latest shoreline map of the area.

(3) The following charted rocks awash were verified in the field and found to be an extension of ledges, however, because of the scale of chart 16701 these rocks were compiled as rocks awash customary to the office chart compilation practices. These rocks should be retained as charted.

Feature	Latitude(N)	Longitude(W)	Prior Survey
Rock Awash	60/19/42.0	148/12/48.0	H-5408
Rock Awash	60/19/45.0	148/12/48.0	H-5408
Rock Awash	60/21/33.0	148/14/55.0	H-5408
Rock Awash	60/18/15.0	148/09/13.0	H-5409

b. Dangers to Navigation

Seven (7) dangers to navigation were reported to the USCG, NIMA, N/CG261 and N/CS34 on October 23, 1996. Three (3) additional dangers were identified during office processing. Copies of both reports are attached.

P. ADEQUACY OF SURVEY

The hydrography on survey H-10723 is adequate to:

a. delineate the bottom configuration, determine least depths, and draw the required depth curves;

b. reveal there are no significant discrepancies or anomalies requiring further investigation; and

c. show the survey was properly controlled and soundings are correctly plotted.

Hydrography on survey H-10723 was acquired in the field in metric units while the smooth sheet for this survey was compiled in fathoms to conform to the sounding unit of the existing NOS nautical charts of the area.

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No.3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, April 1994 Edition.

Survey H-10723 adequately complies with the project instructions.

Q. AIDS TO NAVIGATION

There are no aids to navigation found within the survey area.

There are no prominent features of landmark value located within the survey area.

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS

Miscellaneous information concerning this survey is discussed in the hydrographer's report. No additional miscellaneous items were noted during office processing.

T. RECOMMENDATIONS

Survey H-10723 is a good hydrographic survey and no additional field work is required.

U. REFERRAL TO REPORTS

Referral to reports is discussed in the hydrographer's report.

Isagani A. Almacen
Cartographer

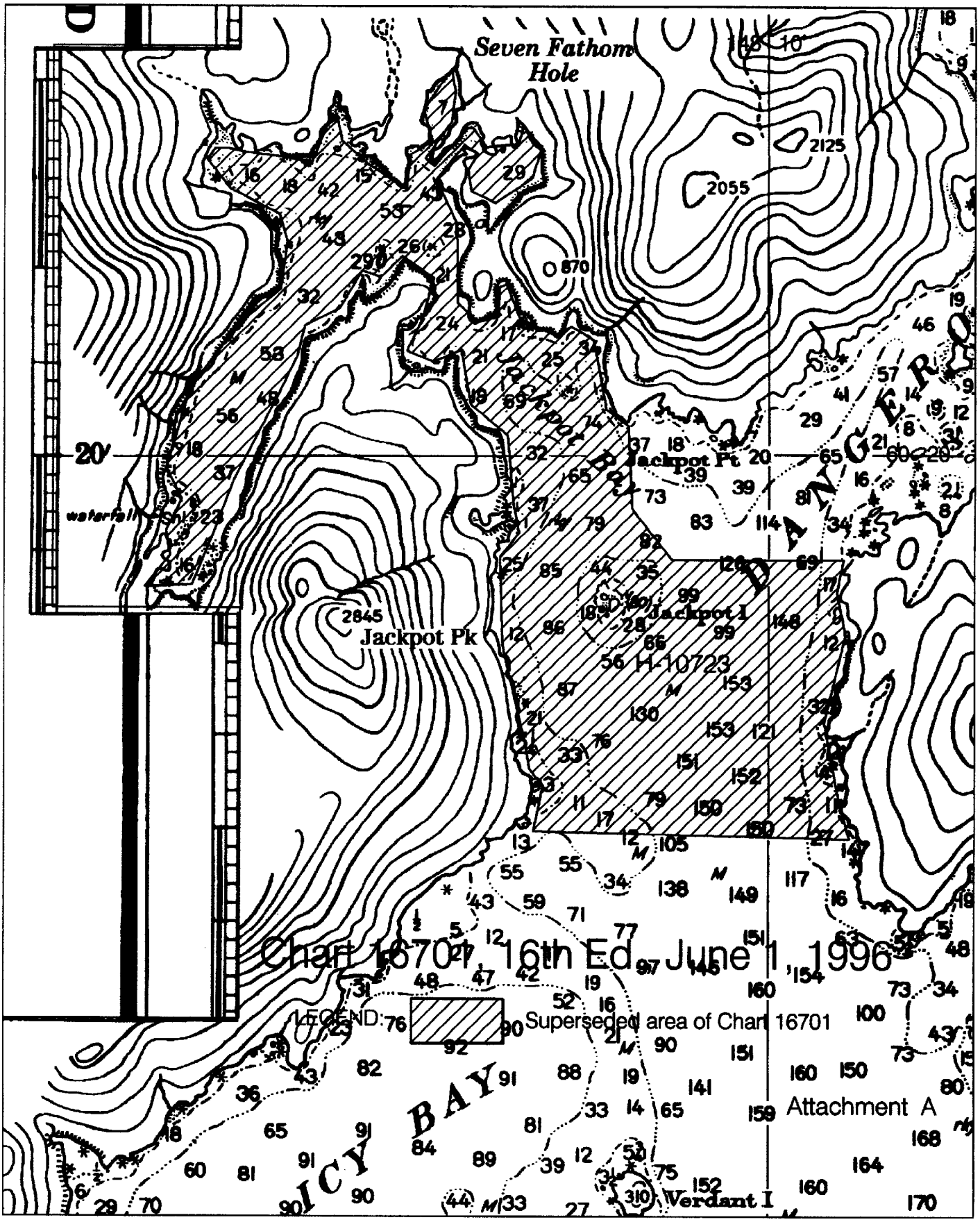


Chart 16701, 16th Ed., June 1, 1996

Attachment A

APPROVAL SHEET
H-10723

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Bruce A. Olmstead Date: 9/24/97
Bruce A. Olmstead
Senior Cartographer, Cartographic Section
Pacific Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Kathy Timmons Date: 9/27/97
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

****

Final Approval

Approved:

Andrew A. Armstrong III Date: Feb. 19, 1998
Andrew A. Armstrong III
Captain, NOAA
Chief, Hydrographic Surveys Division

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H- 10723

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
16701	11/13/97		Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. sndgs. & features from smooth sheet.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.